Health Consultation

Quality Rock Products
Tumwater, Thurston County, Washington

October 24, 2002

Prepared by

The Washington State Department of Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

Washington State Department of Health

Foreword

The Washington State Department of Health (DOH) has prepared this health consultation in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR is part of the U.S. Department of Health and Human Services and is the principal federal public health agency responsible for health issues related to hazardous waste. This health consultation was prepared in accordance with methodologies and guidelines developed by ATSDR.

The purpose of this health consultation is to identify and prevent harmful human health effects resulting from exposure to hazardous substances in the environment. Health consultations focus on specific health issues so that DOH can respond quickly to requests from concerned residents or agencies for health information on hazardous substances. DOH evaluates sampling data collected from a hazardous waste site, determines whether exposures have occurred or could occur, reports any potential harmful effects, and recommends actions to protect public health. The findings in this report are relevant to conditions at the site during the time of this health consultation, and should not necessarily be relied upon if site conditions or land use changes in the future.

For additional information or questions regarding DOH, ATSDR or the contents of this Health Consultation, please call the health advisor who prepared this document:

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Glossary

Agency for Toxic Substances and Disease Registry (ATSDR)	The principal federal public health agency involved with hazardous waste issues, responsible for preventing or reducing the harmful effects of exposure to hazardous substances on human health and quality of life. ATSDR is part of the U.S. Department of Health and Human Services.
Aquifer	An underground formation composed of materials such as sand, soil, or gravel that can store and/or supply groundwater to wells and springs.
Comparison value	A concentration of a chemical in soil, air or water that, if exceeded, requires further evaluation as a contaminant of potential health concern. The terms comparison value and screening level are often used synonymously.
Contaminant	Any chemical that exists in the environment or living organisms that is not normally found there.
Exposure	Contact with a chemical by swallowing, by breathing, or by direct contact (such as through the skin or eyes). Exposure may be short-term (acute) or long-term (chronic).
Groundwater	Water found underground that fills pores between materials such as sand, soil, or gravel. In aquifers, groundwater often occurs in quantities where it can be used for drinking water, irrigation, and other purposes.
Hazardous substance	Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Inorganic	Compounds composed of mineral materials, including elemental salts and metals such as iron, aluminum, mercury, and zinc.
Media	Soil, water, air, plants, animals, or any other part of the environment that can contain contaminants.
Model Toxics Control Act (MTCA)	The hazardous waste cleanup law for Washington State.
Monitoring wells	Special wells drilled at locations on or off a hazardous waste site so water can be sampled at selected depths and studied to determine the movement of groundwater and the amount, distribution, and type of contaminant.
No apparent public health hazard	Sites where human exposure to contaminated media is occurring or has occurred in the past, but the exposure is below a level of health hazard.
No public health hazard	Sites for which data indicate no current or past exposure or no potential for exposure and therefore no health hazard.
Organic	Compounds composed of carbon, including materials such as solvents, oils, and pesticides which are not easily dissolved in water.
Parts per billion (ppb)/Parts per million (ppm)	Units commonly used to express low concentrations of contaminants. For example, 1 ounce of trichloroethylene (TCE) in 1 million ounces of water is 1 ppm. 1 ounce of TCE in 1 billion ounces of water is 1 ppb. If one drop of TCE is mixed in a competition size swimming pool, the water will contain about 1 ppb of TCE.

Plume	An area of contaminants in a specific media such as groundwater.
Route of exposure	The way in which a person my contact a chemical substance that includes ingestion, skin contact and breathing.
U.S. Environmental Protection Agency (EPA)	Established in 1970 to bring together parts of various government agencies involved with the control of pollution.
Volatile organic compound (VOC)	An organic (carbon-containing) compound that evaporates (volatilizes) easily at room temperature. A significant number of the VOCs are commonly used as solvents.

Background and Statement of Issues

The Washington State Department of Health (DOH) has prepared this health consultation at the request of the Thurston County Department of Environmental Health (TCEH) to evaluate the potential human health risks associated with possible contamination of polycyclic aromatic hydrocarbons (PAHs) and pentachlorophenol (PCP) at a Thurston County rock quarry. TCEH has been investigating this facility due to a complaint by residents regarding alleged disposal of hazardous waste from the Cascade Pole hazardous waste site, located on the Port of Olympia complex.

"Quality Rock Products, Inc.," formerly "Fairview Sand and Gravel" is a rock quarry located south of Tumwater, Washington in Thurston County and is used for producing crushed rock, pit run, drain gravel, pea gravel, and recycling concrete and asphalt (Figure 1). Community members expressed concerns to both TCEH and DOH regarding the potential impact that hazardous materials, allegedly used to fill a pit at Quality Rock, might have on nearby private drinking water wells. Community concern focused on past shipments of material to Quality Rock from the Port of Olympia. Some community members believe that some material may have originated from the Cascade Pole facility, a wood treatment facility, also located on Port of Olympia property.

TCEH confirmed that some fill material brought to Quality Rock did originate from the Port of Olympia log sorting yard, located near Cascade Pole. Since dredge spoils from Cascade Pole contained elevated levels of PAHs, PCP, and metals, there was concern that the fill material may contaminate groundwater used for private drinking water wells near Quality Rock. However, information from TCEH and the Port of Olympia indicates that material received by Quality Rock from the Port of Olympia contained only wood waste in the form of accumulated tree bark from the port's log sorting yards.[1,2]

In August of 2002, TCEH took groundwater samples from three monitoring wells at Quality Rock and analyzed the water for semi-volatile organics and several metals. The analysis included chemicals that might be associated with waste from a wood treatment facility such as PCP, creosote, and arsenic. PCP and the various components of creosote were not detected. Lead was detected at 0.0168 mg/l and there were no detections of arsenic.[3,4]

Discussion

Site environmental sampling data were screened using federal (ATSDR and EPA), and state (MTCA method B) health-based criteria (comparison values). Comparison values are media-specific concentrations used to select environmental contaminants for further evaluation. Contaminant concentrations below comparison values are unlikely to pose a health threat, and were not further evaluated in this health consultation. If a contaminant concentration(s) had exceeded comparison values, it would not necessarily have posed a health threat, but would have

been further evaluated as a contaminant(s) of concern to determine the likelihood of adverse

human health effects.

Three monitoring wells located at Quality Rock were sampled in order to determine if hazardous waste from Cascade Pole may have impacted area groundwater. Hazardous waste from Cascade Pole would typically include semi-volatile organics (including PCP), creosote (made up of PAHs), and arsenic. Therefore, groundwater at Quality Rock was sampled for semi-volatile organics using EPA method 8270, and metals, including arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.

PCP, arsenic and PAHs were not detected in any of the samples with detection limits of 0.5 ug/l, 0.005 mg/l, and PAHs range from 0.5 to 0.1 ug/l, respectively. Lead was not detected in two of the three monitoring wells with a detection limit of 0.01 mg/l. The third well, well number GPS#6, showed lead at 16.8 ug/l, slightly above the EPA action level of 15 ug/l (see Figure 1). Lead contamination at GPS#6 is most likely due to it's location being very close to the gasoline and diesel filling station for dump trucks and heavy equipment. There's also a remote possibility of lead contamination at GPS#6 caused by a former pipeline once used to transport petroleum products. Some of the residents near Quality Rock had their wells sampled by a pipeline company to assure that diesel had not contaminated their wells.

The nearest drinking water well is located approximately one-quarter mile east and upgradient of monitoring well GPS#6 and the pit filled with Port of Olympia material.

After having personal discussions with staff from TCEH and the Port of Olympia, DOH believes the material used to fill the pit at Quality Rock is tree bark from Port of Olympia's log sorting yards. The groundwater sample results from the monitoring well closest to the pit, GPS#6, showed a lack of contaminants characteristic of hazardous waste from the Cascade Pole site. Since the location of this well and AHE 101 are located between the pit and private residences east of Quality Rock, this confirms that private wells are not being impacted by hazardous materials. However, since all three monitoring wells are located upgradient of the pit, groundwater results cannot be used to support the nature of the fill material in the pit.

Child Health Initiative

The potential for exposure and associated adverse health effects are often increased for young children as opposed to older children or adults. ATSDR and DOH recognize that children are susceptible to developmental toxicity that can occur at levels much lower than those causing other types of toxicity.

DOH evaluated the likelihood of adverse health effects for young children exposed to hazardous materials in drinking water. However, since drinking water wells have not been contaminated by materials from Cascade Pole, no adverse health effects would be expected to result from this source.

Conclusions

Based on results of groundwater sampling at Quality Rock Products, groundwater does not appear to be contaminated with hazardous materials characteristic of the Cascade Pole hazardous waste site. Anecdotal evidence from Thurston County Department of Environmental Health and the Port of Olympia indicate that the pit at Quality Rock was filled with tree bark from the Port of Olympia's log sorting yards. Groundwater beneath Quality Rock Products represents no public health hazard for residents using nearby private drinking water wells.

Recommendations/Action Plan

DOH understands that some residents have concerns about the quality of the drinking water obtained from their wells located near the Quality Rock Products facility. Information regarding general maintenance of private drinking water wells is available from the Thurston County Department of Environmental Health at 360-754-4111 or from the Environmental Protection Agency at http://www.epa.gov/safewater/pwells1.html or by calling 1-800-426-4791.

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References

1. Telephone discussion with J. Libby, Thurston County Department of Environmental Health, September 26, 2002.

2. Telephone discussion with A. Fontenot, Port of Olympia, September 26, 2002.

3. Letter to G. Tousley, Thurston County Health Department, from M. Korosec, Environmental Services Network. September 3, 2002.

4. Letter to P. Soderberg, Thurston County Health Department, from M. Korosec, Environmental Services Network. September 3, 2002.

Certification

This Health Consultation was prepared by the Washington State Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

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The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

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